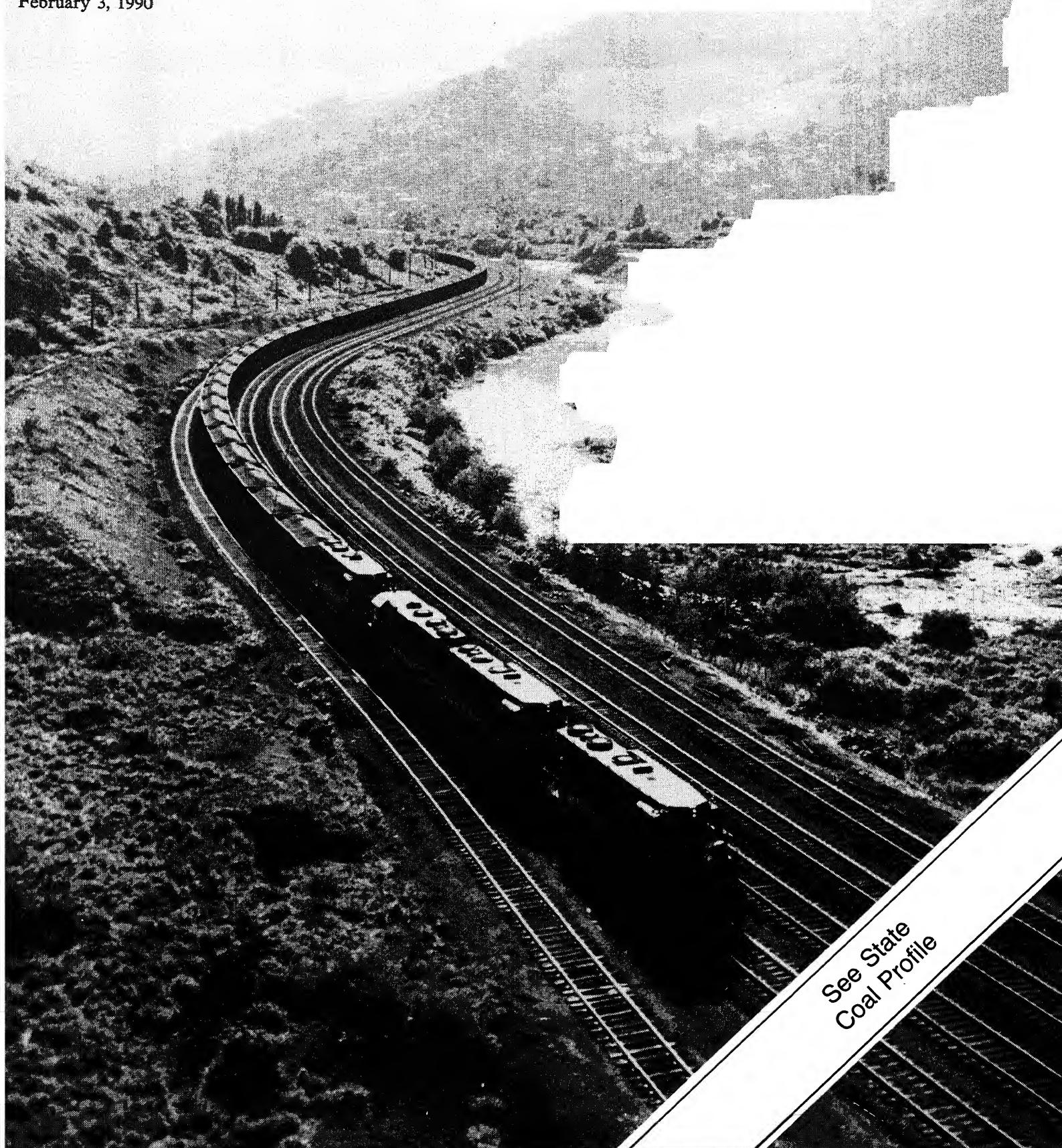


Weekly Coal Production

Production for Week Ended:
February 3, 1990



Preface

The *Weekly Coal Production* (WCP) provides weekly production estimates of U.S. coal by State, as well as supplementary data which are usually published twice a month. The Coal Exports and Imports Supplement contains annual as well as detailed monthly data on U.S. coal and coke exports and imports. Another supplement contains detailed monthly data covering electric utility coal consumption, stocks, and receipts (quantity and price).

This publication is prepared by the Coal Division; Office of Coal, Nuclear, Electric and Alternate Fuels; Energy Information Administration (EIA) to fulfill its data collection and dissemination responsibilities as specified in the Federal Energy Administration Act of

1974 (P.L. 93-275) as amended. *Weekly Coal Production* is intended for use by industry, press, State and local governments, and consumers. Other publications that may be of interest are the quarterly *Coal Distribution Report*, the *Quarterly Coal Report*, *Coal Production 1988*, and *Coal Data: A Reference*.

This publication was prepared by Wayne M. Watson under the direction of Mary K. Paull and Noel C. Balthasar, Chief, Data Systems Branch. Specific information about the *State Coal Profile: California* may be obtained from Eugene R. Slatick (202/254-5384). Questions on energy statistics should be directed to the National Energy Information Center (NEIC) at 202/586-8800.

Photo Credit

Lydia M. Frenzel, American Lignite
Products Company, State Coal Profile

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Summary

U.S. coal production in the week ended February 3, 1990, as estimated by the Energy Information Administration, totaled 20 million short tons. This was 18 percent more than in the comparable week of 1989, predominantly due to higher production in Wyoming, where last year a severe cold spell curtailed production in that region. Production East of the Mississippi River totaled 12 million short tons, and production

West of the Mississippi River totaled 8 million short tons.

Coal production in January 1990 totaled 90 million short tons, 24 percent higher than in December 1989, reflecting a floating holiday option exercised by some mine operators, and 10 percent more than in January 1989.

Figure 1. Coal Production

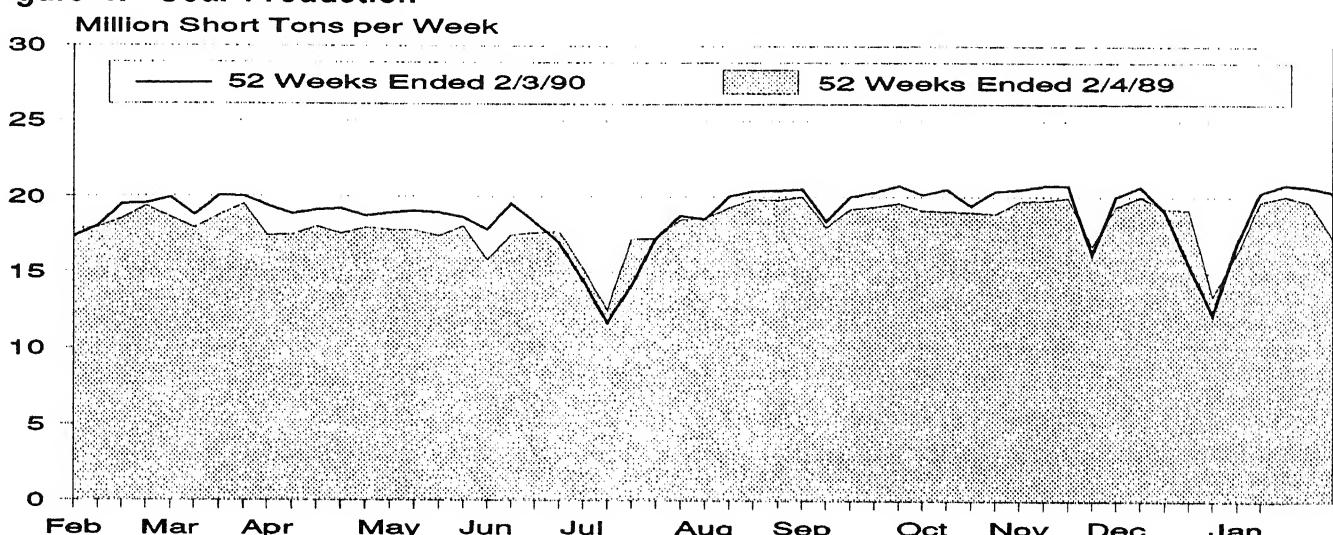


Table 1. Coal Production

Production and Carloadings	Week Ended					Change
	02/03/90	01/27/90	02/04/89	02/03/90	02/04/89	
Production (Thousand Short Tons)						
Bituminous ¹ and Lignite	20,307	20,633	17,254	977,323	946,455	3.3
Pennsylvania Anthracite	77	78	72	3,534	3,594	-1.7
U.S. Total	20,383	20,712	17,326	980,857	950,048	3.2
Railroad Cars Loaded	130,153	132,268	111,416	6,402,034	6,267,695	

¹Includes subbituminous coal.

Notes: All data are preliminary. Totals may not equal sum of components due to independent rounding.

Sources: Association of American Railroads, Transportation Division, Weekly Statement CS-54A; Energy Information Administration, Form EIA-6, "Coal Distribution Report"; Form EIA-7A, "Coal Production Report"; and State mining agency coal production reports.

Table 2. Coal Production by State
 (Thousand Short Tons)

Region and State	Week Ended		
	02/03/90	01/27/90	02/04/89
Bituminous Coal¹ and Lignite			
East of the Mississippi	12,307	12,606	11,691
Alabama	578	584	531
Illinois	1,157	1,219	1,124
Indiana	841	910	588
Kentucky	3,435	3,425	3,107
Kentucky, Eastern	2,536	2,584	2,340
Kentucky, Western	899	841	767
Maryland	59	59	69
Ohio	695	716	698
Pennsylvania Bituminous	1,388	1,396	1,342
Tennessee	133	145	113
Virginia	1,054	1,143	944
West Virginia	2,969	3,009	3,176
West of the Mississippi	8,000	8,027	5,563
Alaska	33	34	26
Arizona	254	258	201
Arkansas	2	2	2
Colorado	430	431	304
Iowa	8	8	9
Kansas	22	23	6
Indiana	46	47	48
Iri	67	69	66
Ia	761	776	528
Mexico	525	561	392
Nkota	601	613	470
a	41	43	23
.	1,074	1,091	885
.	502	508	373
.	94	95	88
.	3,538	3,469	2,140
.	20,307	20,633	17,254
.	77	78	72
		20,712	17,326

¹Sum of components due to independent rounding.
 Source: Division, Weekly Statement CS-54A; Energy Information Agency, EIA-7A, "Coal Production Report"; and State mining agency.

Table 3. Coal Production by State: January 1990
 (Thousand Short Tons)

Region and State	January 1990	December 1989	January 1989	Year to Date		
				1990	1989	Percent Change
Bituminous Coal¹ and Lignite						
East of the Mississippi	54,223	42,657	50,282	54,223	50,282	7.8
Alabama	2,524	1,777	2,232	2,524	2,232	13.1
Illinois	5,414	4,560	5,267	5,414	5,267	2.8
Indiana	3,504	2,284	2,451	3,504	2,451	42.9
Kentucky	15,082	11,020	13,312	15,082	13,312	13.3
Kentucky, Eastern	11,321	8,263	10,027	11,321	10,027	12.9
Kentucky, Western	3,761	2,757	3,285	3,761	3,285	14.5
Maryland	273	236	292	273	292	-6.3
Ohio	3,036	2,436	2,895	3,036	2,895	4.9
Pennsylvania Bituminous	5,559	5,367	5,590	5,559	5,590	-0.5
Tennessee	594	404	483	594	483	23.0
Virginia	4,737	3,362	4,049	4,737	4,049	17.0
West Virginia	13,500	11,211	13,711	13,500	13,711	-1.5
West of the Mississippi	35,659	29,897	31,686	35,659	31,686	12.5
Alaska	150	153	125	150	125	19.4
Arizona	1,120	982	950	1,120	950	17.8
Arkansas	7	7	7	7	7	-9.0
Colorado	1,830	1,708	1,324	1,830	1,324	38.3
Iowa	36	30	50	36	50	-27.3
Kansas	96	64	58	96	58	66.1
Louisiana	249	215	243	249	243	2.2
Missouri	300	298	316	300	316	-5.1
Montana	3,469	3,086	3,200	3,469	3,200	8.4
New Mexico	2,279	1,746	1,769	2,279	1,769	28.8
North Dakota	2,791	2,653	2,827	2,791	2,827	-1.0
Oklahoma	190	141	150	190	150	
Texas	4,810	3,904	4,186	4,810	4,186	
Utah	2,186	1,946	1,693	2,186	1,693	
Washington	416	348	416	416	416	
Wyoming	15,731	12,615	14,373	15,731		
Bituminous ¹ and Lignite Total	89,883	72,554	81,969	89,883		
Pennsylvania Anthracite	307	291	281	---		
U.S. Total	90,189	72,844	82,250			

¹Includes subbituminous coal.

Notes: All data are preliminary. Totals may not equal sum of components due to independent rounding.

Sources: Association of American Railroads, Transportation Division, Weekly Statement CS-54A; Energy Information Administration, Form EIA-6, "Coal Distribution Report"; Form EIA-7A, "Coal Production Report"; and State mining agency coal production reports.

State Coal Profile: California

Total Area of State:

158,693 square miles

Area Underlain by Coal:

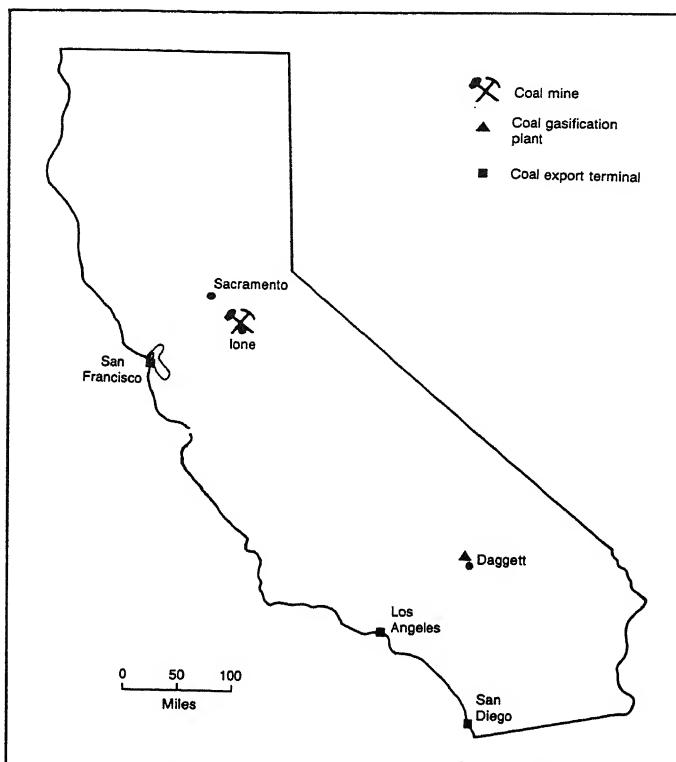
230 square miles

First Year of Documented Coal Production:

1861 (6,620 short tons)

Peak Year of Coal Production:

1880 (237,000 short tons)

1988 Coal Production:54,000 short tons
(<1 percent of U.S. total)**1988 Coal Consumption:**2 million short tons
(<1 percent of U.S. total)**1988 Coal Exports Through California:**1 million short tons
(¹/1 percent of U.S. total)

	<u>Number</u>	<u>Percentage of U.S. Total</u>
Number of Mines (1988)	1	<1
Underground	0	-
Surface	1	<1
Number of Miners (1988)	8	<1
Underground	0	-
Surface	8	<1

Coal occurs in California in small, widely scattered deposits that range in rank from lignite to bituminous. However, the total reserve of minable coal in the State has not been determined. Currently, coal is produced in California only at a single small lignite mine near Ione, in the northern part of the State. The operation is unique because it is the only U.S. coal deposit mined exclusively for montan wax, a fossil plant wax—found in only a few American lignites—that is used for industrial purposes.

Coal was mined in California as early as 1855, but coal mining as an industry began in 1861, when production of nearly 7,000 short tons was recorded. The output reached a peak of 237,000 short tons in 1880, about the time when large deposits of oil and natural gas were discovered in the State. Coal production fluctuated widely in the succeeding years. After increasing to a second peak of 172,000 short tons in 1900, production dropped sharply and became practically insignificant as oil and gas displaced coal as a source of energy in the State.

At the end of World War II, California's lignite deposits were among those investigated as part of a Federal program to locate domestic deposits with a high wax content. The search was prompted by a wartime shortage of montan wax, which had been imported chiefly from Germany. A lignite deposit near Ione was one of the few found to have a wax content of economic potential. In 1947, the American Lignite Products Company (ALPCO) started mining the deposit, initially to produce briquettes, but soon to extract montan wax. ALPCO, which began as a family-owned business, is now a subsidiary of Combustion Engineering.

The Ione lignite bed, which is 12 to 15 feet thick, is surface mined selectively after drilling has located areas with a high wax content. It is mined during the driest summer months and stockpiled at the wax plant for use throughout the year. The level of annual production, governed by the market for montan wax, has averaged about 50,000 tons in recent years.

Montan wax is extracted from dried, pulverized lignite through the use of solvents. The wax is hard, brittle, and has a high melting point; its properties are similar to those of natural plant waxes, such as carnauba wax, which it can replace. Most of the wax undergoes additional processing to produce waxes for specific uses. The principal use is in hot-melt carbon inks. Other applications include spray lubricants, thin-film temporary coatings, release agents for molded phenolic parts and polyurethane fiber board, protective coatings, special waterproofing compounds, and ink additives. Some of the lignite residue from wax production is sold as a soil conditioner.

Once considered unsuitable as a commercial fuel, the lignite residue from wax production is being used as fuel in a 15-megawatt cogenerating facility built at Ione in 1987 by Ione Energy, Incorporated, a joint venture of the Reading Energy Group (80 percent) and Combustion Engineering (20 percent). The facility is equipped with a circulating fluidized-bed boiler, the first to use lignite, and can burn low-quality fuel in an environmentally acceptable manner. Electricity, steam, and hot air produced at the facility are sold to the wax plant. However, most of the electricity produced is sold to the Pacific Gas and Electric Company under a 30-year agreement.

The cogenerating facility consumes about 200,000 short tons of lignite annually. Currently, all of this is from a large stockpile of lignite residue, which has accumulated since montan wax production began. The stockpile totaled about 700,000 short tons in 1987. When this supply is depleted, the facility will burn a mixture consisting of 80 percent non-wax-bearing lignite mined from the Ione deposit and 20 percent residue from the wax plant. Both the lignite and lignite residue are low-grade fuels, containing about 10 million Btu per short ton, 26 percent ash, 30 percent moisture, and 1.2 percent sulfur.

Although wax production represents the most unusual use of coal in California, considerably more coal is used as fuel. In 1988, coal consumption in the State totaled about 2 million short tons. Most of this was bituminous coal produced in Utah. Cement plants were the major coal consumers, accounting for more than 60 percent of the State's total. Large amounts of coal were also used as a source of heat in producing sodium carbonate from natural brines, and in the Cool Water coal gasification plant at Daggett.

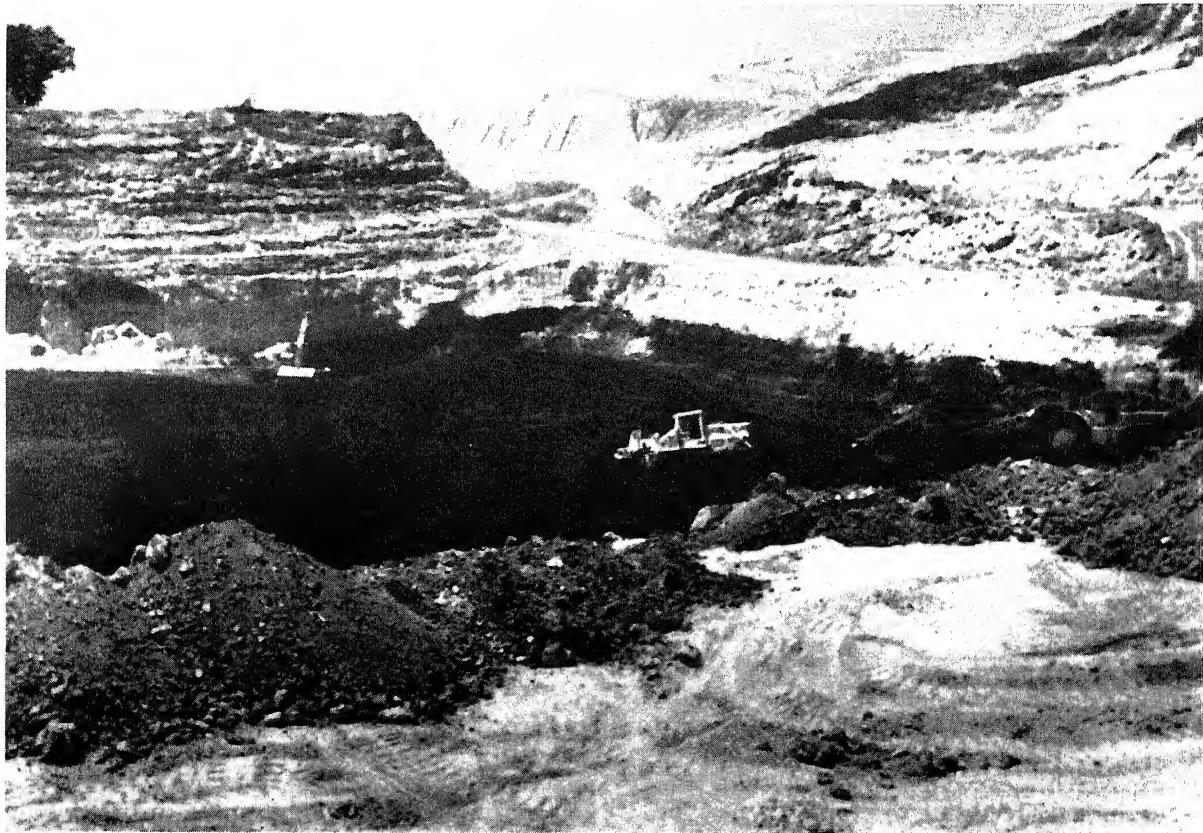
The Cool Water plant is notable because it is the Nation's first commercial-scale power plant to demonstrate the use of coal gasification as part of an integrated combined-cycle generation system, and because it ranks as one of the world's cleanest coal-fed utilities. The plant converts bituminous coal into synthesis gas (a mixture mainly of carbon monoxide and hydrogen) for use as fuel in a gas turbine electrical generator. Additional electricity is produced by recovering the hot exhausts from the coal gasifier and gas turbine to make steam for a steam turbine generator. The combined electrical output is about 100 megawatts. Cool Water was privately built and operated as a demonstration project by six participants, assisted by Federal funding, from June 1984 to June 1989. In late 1989 the plant was purchased by one of the participants, Texaco Syngas, Incorporated. It is scheduled to be in commercial operation in 1991, fueled with a mixture composed of 75 percent coal and 25 percent sewage sludge.

Several ports in California are shipping points for coal exports from western mines. Los Angeles is by far the principal coal-exporting district, accounting for most of the 1 million short tons of coal exported through California in 1988. Smaller amounts are handled at San Francisco and San Diego.

Coal production in California is expected to rise to about 200,000 short tons per year in the early 1990's as additional lignite is mined to replenish the stockpile at the Ione cogenerating facility. Coal consumption is expected to remain at approximately 2 million short tons per year for the foreseeable future. The lignite deposits in northern California are potentially important as future sources of fuel for electrical generating plants built near the deposits.

Sources

Energy Information Administration, *Coal Production* (various issues), *Quarterly Coal Report* and *Coal Distribution* (annual issues), and Form EIA-3, "Quarterly Coal Consumption Report—Manufacturing Plants"; Lydia M. Frenzel, American Lignite Products Company, written communication, 1989; "History of Coal in California," *California Geology*, September 1976; W.A. Selvig and others, "American Lignites: Geological Occurrence, Petrographic Composition, and Extractable Waxes," Bureau of Mines Bulletin 482, U.S. Department of the Interior (Washington, DC, 1950); "Texaco Wins Bidding Rights to Cool Water; Plans to Co-Fire Sludge with Coal at CA Plant," *Clean-Coal/Synfuels Letter* (October 9, 1989).



Small but unique, this lignite mine near Ione is the only producer of coal in California. It is also the only domestic source of montan wax, a fossil plant wax extracted from the lignite and used for industrial purposes.

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Energy Information Administration
Forrestal Building, Room 1F-048
Washington, DC 20585
(202) 586-8800
TDD (202) 586-1181
Hours: 8:00-5:00, M-F, Eastern Time

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